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12 **EUROPEAN PATENT APPLICATION**

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71 Applicant: **Silk Cut Flowers Limited**  
**AMP House 2 Cyprus Road Regents Park Road**  
**London N3 3RY(GB)**

72 Inventor: **Leech, Andrew John**  
**Littler Grange Farm**  
**Littler Lane, Winsford, Cheshire(GB)**

72 Inventor: **Church, Barry Alan**  
**Littler Grange Farm**  
**Littler Lane, Winsford, Cheshire(GB)**

72 Inventor: **Wintle, Brian Alexander**  
**33 Brabourne Rise**  
**Park Langley, Beckenham, Kent(GB)**

74 Representative: **Ajello, Michael John**  
**38a Bramhall Lane South**  
**Bramhall Stockport Cheshire SK7 1AH(GB)**

54 **A collapsible display stand.**

57 **A collapsible display stand comprising a variable parallelepiped framework defined by eight connecting nodes (10) at the corners interconnected by rods (11) pivotally attached diagonally to the corners of the four rectangular sides. Each node (10) consists of a plate (13) and one or more pairs of parallel lugs (14) projecting from one face thereof and to which rods (11) are attached. On the opposite face of the plate (13) there is applied or integrally formed, a supporting surface (29) for freely mounting an edge of a display sheet (30) or the like.**

0219201

A COLLAPSIBLE DISPLAY STAND

THIS INVENTION concerns a collapsible display stand in the form of a variable parallelepiped framework defined by eight connecting nodes at the corners interconnected by rods pivotally attached diagonally to the corners of four rectangular sides. A framework of this kind may stand alone or form one part of a composite framework produced by joining a number of such units together. The stand may be used to mount rigid or flexible display graphics.

10 An object of the present invention is to provide a collapsible display stand of the aforesaid kind wherein the connecting nodes are improved with respect to their conventional counterparts, rendering the stand more easily assembled and more readily adapted to receive a graphics display sheet.

20 According to the present invention there is provide a collapsible display stand comprising a variable parallelepiped framework defined by eight connecting nodes at the corners interconnected by rods pivotally attached diagonally to the corners of four rectangular sides, characterised in that of at least some of the connecting nodes, each consists of a plate-like member with two or more pairs of parallel lugs projecting from one face

0219201

thereof; in that a connecting rod is pivotally attached to  
and between at least one of said pairs of lugs to be  
supported thereby; and in that on the opposite face of said  
plate-like member a supporting surface is provided for  
5 freely mounting an edge of a display sheet or the like.

Embodiments of the invention will now be  
described, by way of example only, with reference to the  
accompanying drawings in which:-

10 Fig. 1 is perspective view of a collapsible  
display stand made in accordance with the  
invention;

Fig. 2 is an enlarged view of one of a number of  
connecting nodes forming part of the stand  
illustrated in Fig. 1;

15 Fig. 3 shows a peg which may be removably attached  
to the node of Fig. 2 to form a part of a means  
for mounting a display sheet.

20 Fig. 4 shows a peg similar to that shown in Fig. 3  
but double-ended to enable two stands as  
illustrated in Fig. 1 to be connected back-to-  
back;

Fig. 5 shows a plate for attachment to the peg of

**0219201**

Fig. 3 to support the corners of a number of display sheets;

and Fig. 6 shows a secondary peg attachable to the peg of Fig. 3 to fix the plate of Fig. 5.

5           It will be seen from Fig. 1 that a collapsible display stand of the kind with which this invention is concerned comprises eight connecting nodes 10 providing the upper four and lower four corner mounts for a number of rods which form a parallelepiped framework. The rods 11  
10 are pivotally attached diagonally to the corners of four rectangular sides which, in this example, are represented by a base, a top and two ends, the diagonally intersecting rods 11 on each side being pivotally connected together at their mid points as illustrated at 12.

15           Referring to Fig. 2 it will be seen that each node 10 consists of a plate-like member 13 having a number of pairs of parallel lugs 14 projecting from one face thereof. The node is preferably of a plastics material and manufactured by moulding such that the lugs 14 and plate-  
20 like member 13 are integral. Each pair of lugs 14 is joined at its inner end by a central wall member 15 disposed generally diagonally with respect to the corners of plate-like member 13. The walls 15 define a square sectioned central aperture 16 for a purpose to be

Each pair of lugs 14 has a pair of apertures 17 by which the end region of one of the rods 11 may be fixed to the node 10 using a removable pin 18 which passes through 5 apertures 17 and a corresponding aperture through rod 11. A snap ring 19 may be applied to lodge behind locating teeth 20 on pin 18, to retain same, the head 21 of the pin locating against the adjacent lug 14.

Apertures 22 are provided in the corner regions of 10 the node, for example, as a means of attachment of the stand to a wall or other stand member.

The peg illustrated in Fig. 3 comprises a square sectioned shank 23 having an enlarged square sectioned head 24. The end of the shank 23 remote from the head is split 15 at 25 and carries a pair of retaining projections 26. The peg has a threaded bore as illustrated at 27.

A peg of the kind illustrated in Fig. 3 is preferably of plastics and may be fixed to a node 10 by inserting it into the latter such that head 24 of the peg 20 lies flush with the remote face of plate-like member 13 as viewed in Fig. 2, whilst retaining projections 26 bear against the end faces of walls 15.

With the display stand erected as illustrated in

0219201

Fig. 1, and a peg of the type illustrated in Fig. 3  
inserted in the central aperture of each node 10, a  
graphics display sheet may be mounted across one face of  
the stand and supported at each of four corners by a  
5 retaining plate of the kind illustrated in Fig. 5.

In this example the plate consists of a disc 28  
having a number of locating projections 29 on one face  
thereof which supports a corner region of a display sheet  
30. The projections 29 bear against the plain surface of  
10 the node 10 and the assembly is held together by inserting  
a screw 31 through disc 28 into aperture 27 of the central  
peg within the node 10. A plate or disc of the kind  
illustrated in Fig. 5 will be used to attach rigid graphics  
display sheets. If required, the plate or disc 28 may be  
15 integrally formed with member 13 such that shelves similar  
to projections 29 remain between them.

In the case of a flexible display sheet (known as  
"soft graphics"), this may be attached to the stand by  
inserting a flanged screw of the type illustrated in Fig. 6  
20 into aperture 27 to serve as a locating peg for a band of  
resilient material of the type usually found attached to  
the corner regions of such flexible sheets. Their  
flexibility requires that they be tensioned when displayed,  
giving rise to the use of a resilient band.

0219201

By providing a double-ended peg of the type illustrated in Fig. 4, it is possible readily to attach two collapsible display stands back-to-back, the double-ended pegs forming the connecting pieces and inserted into  
5 apertures 16 in each pair of corresponding nodes 10. Like parts in Figs. 3 and 4 are given like reference numerals, and a central bridging piece 32 serves to join the two ends of the peg back-to-back.

The construction of the framework illustrated in  
10 Fig. 1 is such that it may be collapsed into a rectangular form or alternatively into a narrow column with all of the rods 11 substantially parallel. When erected, its height may be determined, for example, by a pair of hooks 33 (see Fig. 1) whose remote ends are threaded and can thus be  
15 located adjustably within apertures 27 of the removable pegs. Different-sized or adjustable hooks can be included to provide height adjustment for the stand which may accommodate, say, three sizes of panel.

It is not intended to limit the invention to the  
20 above examples only, many variations, such as might readily occur to one skilled in the art, being possible without departing from the scope thereof.

For example, each node 10 may carry only those numbers of pairs of lugs 14 required to mount the rods 11  
25 to be attached thereto, although for ease of manufacture,



**0219201**

it is expected that a single moulding will be used to produce the nodes 10 which will thus be identical.

Furthermore, the disc 28 in Fig. 5 may be replaced by a plate having a different shape, for example, similar  
5 to nodes 10.

Still further, a plate generally of the kind illustrated in Fig. 5 or a peg generally of the kind illustrated in Fig. 6 can be integrally moulded with or permanently attached to a peg of the kind illustrated in  
10 Fig. 3 thus, in some cases, obviating the need for a screwed connection, although by providing the screw 31, the spacing between disc 28 and the adjacent face of node 10, can be adjusted according to different thicknesses of sheet  
30.

15 The tubular rods 11 may be of any cross-sectional shape, and may carry attachment means, for example, for a shelf or other appendage.

CLAIMS

0219201

1. A collapsible display stand comprising a variable  
parallelepiped framework defined by eight connecting nodes  
at the corners interconnected by rods pivotally attached  
diagonally to the corners of four rectangular sides,  
5 characterised in that of at least some of the connecting  
nodes, each consists of a plate-like member with two or  
more pairs of parallel lugs projecting from one face  
thereof; in that a connecting rod is pivotally attached to  
and between at least one of said pairs of lugs to be  
10 supported thereby; and in that on the opposite face of said  
plate-like member a supporting surface is provided for  
freely mounting and edge of a display sheet or the like.

2. A collapsible display stand according to Claim 1,  
wherein said supporting surface is provided by a further  
15 plate-like member carrying outstanding locating projections  
on one face thereof which bear against said one face of  
said first plate-like member, said projections serving to  
support one or more edges of one or more display sheets.

3. A collapsible display stand according to Claim 2,  
20 wherein said further plate-like member and its projections  
are attached to said node by means of a screw engaging  
within a removable peg attached to said node.

4. A collapsible display stand according to Claim 2,

0219201

wherein said further plate-like member and said projections are integrally formed with said first plate-like member and of a plastics material.

5. A collapsible display stand according to Claim 3,  
5 wherein said removable peg is non-circular in cross-section and engages within a similar non-circular aperture in the central region of said node.

6. A collapsible display stand according to any preceding claim, wherein each node carries two pairs of  
10 parallel lugs projecting from said one face thereof, each pair pivotally mounting a connecting rod such that each node has two such rods attached thereto.

7. A collapsible display stand according to Claim 3, wherein said removable peg is double-ended thus to be  
15 attachable to two similar nodes placed back-to-back and removably to join two such display stands together.

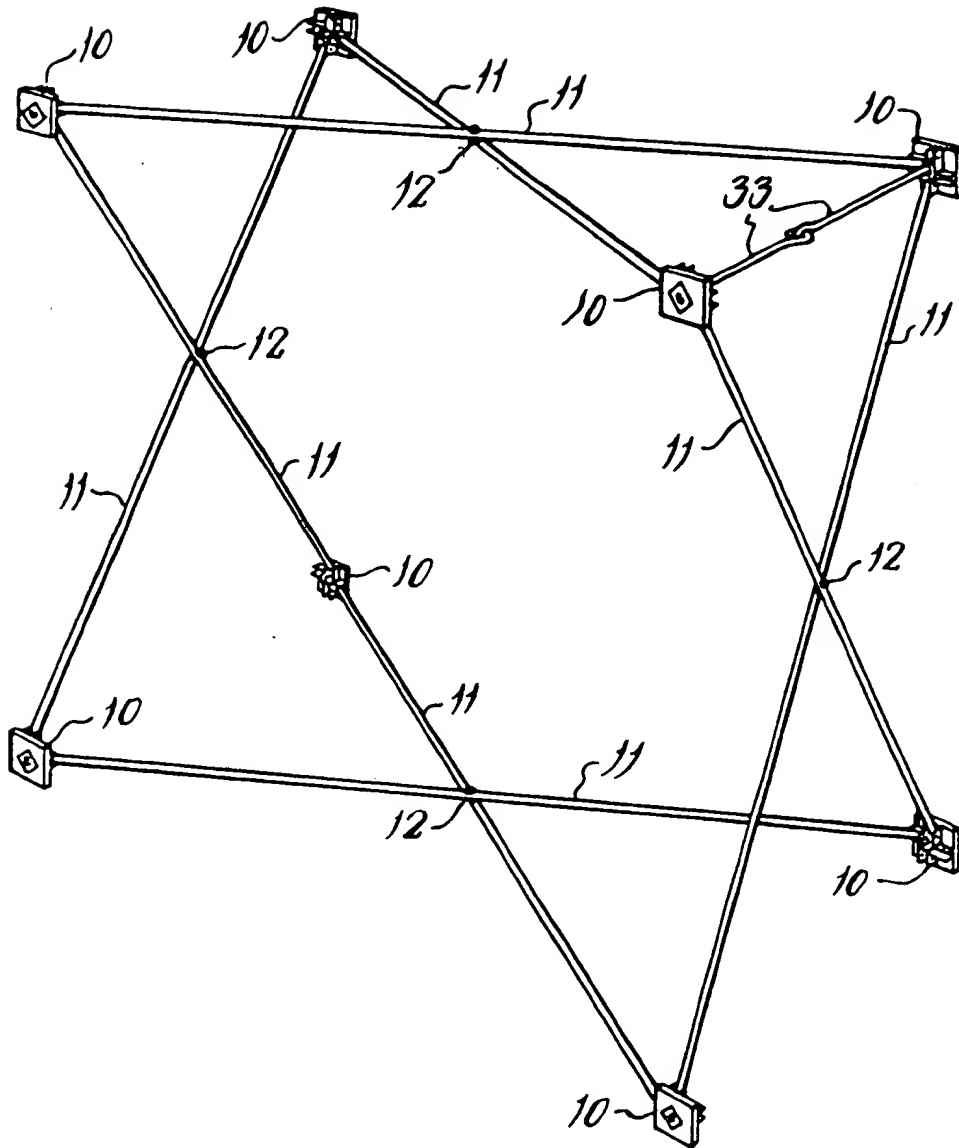
8. A collapsible display stand according to any preceding claim, wherein said connecting rod is pivotally attached to and between said at least one pair of lugs by  
20 means of a removable pin which passes through apertures in said lugs and an aperture through said rod, a snap ring being applied to the removable pin to retain same with the head of the pin locating against its adjacent lug.

**0219201**

9. A collapsible display stand according to any preceding claim, including one or more hooks connected to one or more of said nodes and connectable to another of said nodes to determine the height of the display stand  
5 when erected.

10. A collapsible display stand according to Claim 9, wherein a number of different sized or adjustable hooks are included to provide height adjustment for the stand and to enable it to accommodate different sizes of display panel.

10 11. A collapsible display stand substantially as hereinbefore described, with reference to and illustrated in the various figures of the accompanying drawings.

FIG.1

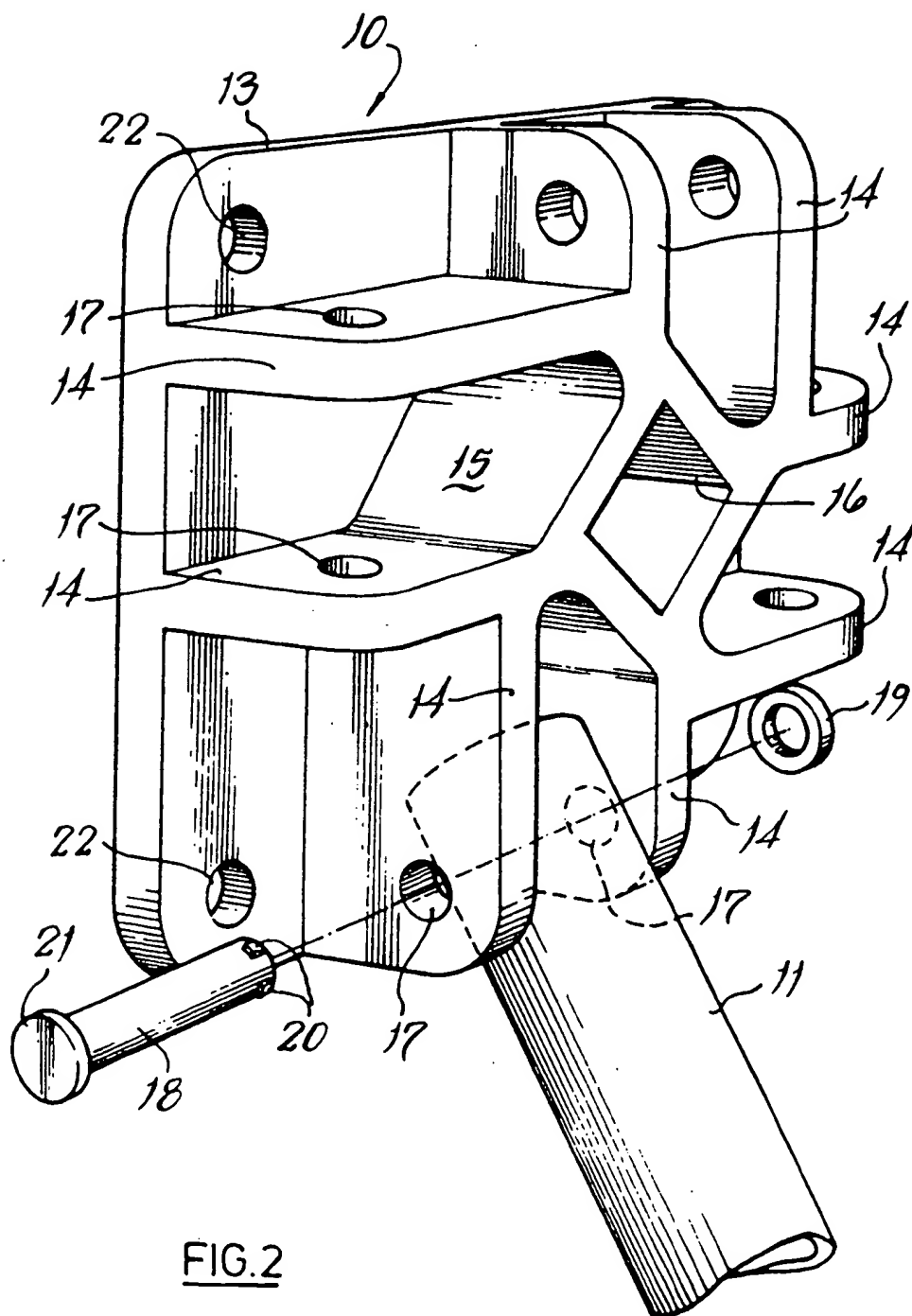
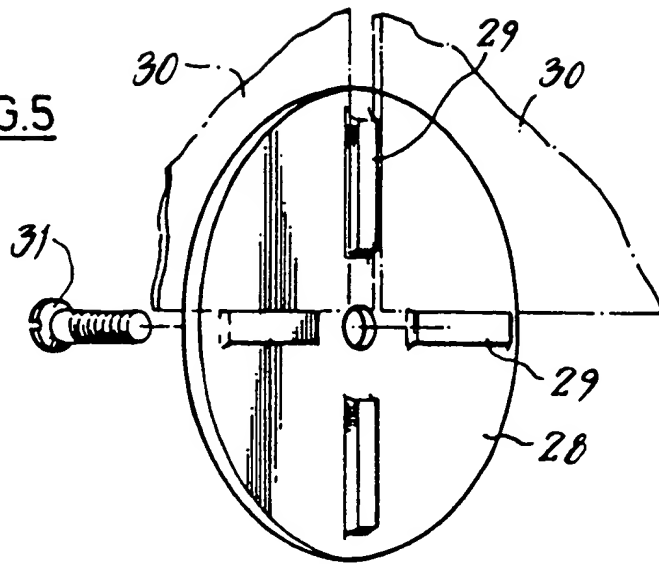
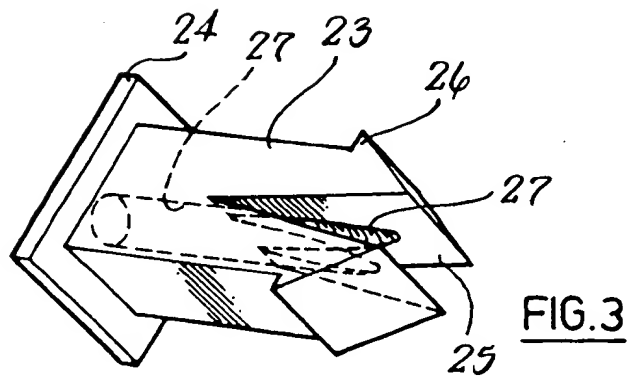
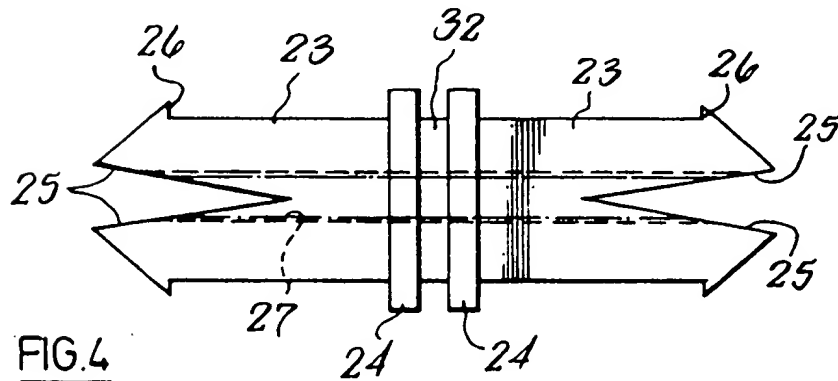


FIG.5FIG.6FIG.3FIG.4

(12)

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(71) Applicant: **Silk Cut Flowers Limited**  
**AMP House 2 Cyprus Road Regents Park Road**  
**London N3 3RY(GB)**

(72) Inventor: **Leech, Andrew John**  
**Littler Grange Farm**  
**Littler Lane, Winsford, Cheshire(GB)**

(72) Inventor: **Church, Barry Alan**  
**Littler Grange Farm**  
**Littler Lane, Winsford, Cheshire(GB)**

(72) Inventor: **Wintle, Brian Alexander**  
**33 Brabourne Rise**  
**Park Langley, Beckenham, Kent(GB)**

(74) Representative: **Ajello, Michael John**  
**38a Bramhall Lane South**  
**Bramhall Stockport Cheshire SK7 1AH(GB)**

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# EUROPEAN SEARCH REPORT

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Application number

EP 86 30 6218

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	US-E- 31 641 (D.L. DERUS) * figures 1a,3a,3b; column 3, line 19 - column 4, line 12; column 7, line 59 - column 8, line 40 *	1	G 09 F 15/00 G 09 F 1/10
A	US-A-4 471 548 (J. GOUDIE) * figure 1 *	1	
A	EP-A-0 101 805 (T.R. ZEIGLER) * figures 1-5; page 4, line 7 - page 5, line 23 *	1	
A	WO-A-8 401 094 (P. NODSKOV) * figure 1; abstract *	1	
A	EP-A-0 106 016 (T.R. ZEIGLER)  -----		TECHNICAL FIELDS SEARCHED (Int. Cl. 4)  G 09 F 1/10 G 09 F 15/00
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 16-10-1987	Examiner ARENDT M
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